ELECTRICAL POWER SYSTEM AND POWER GENERATOR CONTROL ELC007

COURSE DESCRIPTION

Generation power plants are the principle elements in defining networks voltages and frequencies, which are reflected into loads performances and efficiencies. Controlling the generation power plants output voltages and frequencies guarantee stable and reliable system operation. Both corrective and preventive control techniques are to be used in power plants, which are generating hundreds or thousands of megawatts all over the hour.

COURSE GOAL

To enhance the participants' Knowledge, Skills and abilities necessary to understand the whole control system of voltage and frequency in power plants, in its connected networks and at load centres.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Be familiar with power systems.
- Understand the symmetrical three-phase power system.
- Understand steady-state analysis of power systems.
- Understand unbalanced system analysis
- Understand dynamic analysis of power systems
- Understand power systems controls:
- Be familiar with power system controllers:
- Understand generators voltage control system:
- Understand network and loads voltage control systems:
- Be familiar with turbines speed governors:
- Be familiar with AGC, LFC and EGC.
- Understand optimal and suboptimal power system controls
- Understand SCADA systems control.

WHO SHOULD ATTEND

- Electrical engineers.
- Maintenance technicians.
- Electrical supervisors.

COURSE DURATION

5 Working Days

COURSE OUTLINES

- Introduction to Power Systems.
- The Symmetrical Three-Phase Power System.
- Steady-state Analysis of Power systems.
- Unbalanced System Analysis.
- Dynamic Analysis of Power Systems.
- Power Systems Controls.
- Power System Controllers.
- Controlled Generating Power Plants.
- Generators Voltage Control System.
- Network and Loads Voltage Control Systems.
- Turbines Speed Governors.
- Automatic Generation Control (AGC).
- Load Frequency Control System (LFC).
- Economic Generation Control (EGC).
- Optimal and Suboptimal Power System Controls.
- SCADA Systems Control.